

REMARKS

Prosecution has been reopened by the Examiner, and U.S. Patent No.: 5,025,885 (Froeschle) has been newly cited and applied by the Examiner, in combination with the previously cited and relied on U.S. Patent No.: 2,688,373 (Olson), to reject claims 1-10, 19 and 20, as well as 11-18, under 35 U.S.C. 103(a). This rejection is respectfully disagreed with, and is traversed below.

The arguments made previously by Attorney Munck regarding Olson are repeated and incorporated by reference herein, and are further augmented below.

In rejecting claim 1 the Examiner states that Olson does not teach an external port to the second chamber (designated 27 in Fig. 4), and uses Froeschle for his teaching of an external vent (Fig. 1A, item 22) to a second chamber (Fig. 1A, item 14). The Examiner concludes by stating that it would have been obvious to one of ordinary skill in the art to "modify the enclosure taught by H.F. Olson to include an external vent to the second chamber as taught by Froeschle" in order to gain certain purported advantages, including an increase in the low frequency response and decreased distortion.

The Examiner's rejection based on the proposed combination of Olson and Froeschle is traversed at least for the following reasons.

Olson teaches away from the use of an external vent in a loudspeaker enclosure that includes two loudspeakers, and thus one skilled in the art would not be led to attempt the modification proposed by the Examiner.

Olson in col. 1, lines 14-16 and 23-31, refers to "open back" loudspeaker cabinets being known in the art, but not being preferred due to several technical problems associated with their use (e.g., an undesirable resonance and excessive output power attenuation).

Olson then goes on to describe objects of his invention, and his purported invention generally,

in the context of a relatively small "closed back cabinet" (col. 1, lines 45-46) or a "closed cabinet" (col. 1, lines 49 and 53). In col. 2, at lines 6-16, Olson specifically refers to the use of two loudspeakers in a cabinet structure that is arranged to provide "two acoustically closed chambers", and any openings that he refers to are closed by loudspeaker diaphragms.

In describing the Figure 4 embodiment that is referenced by the Examiner, Olson specifically refers to an "acoustically closed cabinet or walled enclosure 15", where "the loudspeaker diaphragms together with the enclosure walls and the partition provide two acoustically closed chambers" (col. 4, line 58, to col. 5, line 2, emphasis added). See also his independent claims 1 and 7, both of which recite the use of "acoustically closed chambers".

This being the case, it is submitted that it would clearly not have been obvious to one skilled in the art to "modify the enclosure taught by H.F. Olson to include an external vent to the second chamber as taught by Froeschle", as stated by the Examiner.

It is respectfully submitted that the Examiner has not met at least the first requirement to establish a *prima facie* case of obviousness, in that the Examiner has not established that there is some suggestion or motivation to combine the reference teachings. MPEP 2143.02 establishes that the prior art must be considered in its entirety, including disclosures that teach away from the claims, and MPEP 2145.X.D.1 establishes that a prior art reference that "teaches away" from the claimed invention "is a significant factor to be considered in determining obviousness".

In the instant case, the Examiner's primary reference (Olson) discusses an "open back" cabinet as being disadvantageous, and then describes and claims a loudspeaker cabinet or enclosure that is "acoustically closed", and that contains "two acoustically closed chambers". The Olson patent thus clearly provides a teaching away from the use of an external vent from one of the chambers to the external environment, and also clearly teaches away from the use of an internal vent between the chambers.

Further, Olson is specifically concerned with the use of two speaker diaphragms, one arranged

to close the opening from the first chamber to the outside, and the other arranged to close the opening in the internal partition (see Figs. 4 and 8). However, Froeschle discloses the use of a single loudspeaker driver in combination with port tubes 22, 24 or drone cones 22', 24' (Fig. 3) that function as passive radiator elements. The result of this arrangement is said to be shown in Fig. 2B, where the output power curve is said to show a smooth response through the passband, without the resonance seen in Fig. 1B.

However, the Examiner has not established that the technique of Froeschle, disclosed for use with a single loudspeaker element mounted on an internal partition wall of the loudspeaker enclosure, would provide a similar purported benefit if used in a two loudspeaker system of the type disclose by Olson. Thus, there arises a further question as to whether there exists a motivation or suggestion to combine the teachings of Olson and Froeschle as the Examiner has attempted.

Furthermore, and assuming, without admitting, that there would be a suggestion to combine these teachings as the Examiner has attempted, it is clearly not admitted that the Examiner has established that the purported improvements in the output power over the passband, as shown in Fig. 2B of the single loudspeaker system of Froeschle, would be attainable in the two loudspeaker system of Olson.

Pending independent claim 1 recites in part that an acoustical enclosure comprises a speaker box comprising walls that enclose an acoustic chamber, a partitioning wall dividing the acoustic chamber into a first chamber and into a second chamber, and that "at least one wall of said walls that enclose said acoustic chamber comprises portions that form an external vent to said second chamber", in addition to the first and second speakers that are mounted as claimed.

As was argued above, there is clearly no suggestion to one skilled in the art to modify the Olson teachings with the teachings of Froeschle, in the manner done by the Examiner, in an attempt to arrive at the subject matter claimed in claim 1.

In that claim 1 is clearly patentable over Olson in view of Froeschle, then claims 2-8 are clearly patentable as well. Note further in this regard the subject matter of claim 2, as it pertains to the internal vent between the first and second chambers, and the express teachings of Olson to provide "two acoustically closed chambers", as was noted above.

Independent claim 9 is drawn to an acoustical enclosure that comprises a speaker box that comprises walls that enclose an acoustic chamber, a partitioning wall that divides the acoustic chamber into a first chamber and into a second chamber, where "at least one wall of said walls that enclose said acoustic chamber comprises portions that form an external vent to said second chamber", and two speakers mounted as claimed where the "second speaker enhances acoustical performance of said acoustic chamber of said acoustical enclosure by extending a range of low frequency response of said acoustical enclosure to approximately thirty Hertz."

As was argued above, there is clearly no suggestion to one skilled in the art to modify the Olson teachings with the teachings of Froeschle, in the manner done by the Examiner, in an attempt to arrive at the subject matter claimed in claim 9. Note further in this regard that it was argued above that if any actual extension of a lower end of the frequency range of the Froeschle system occurs (Fig 2B), the extension would be for a single-loudspeaker enclosure system as shown in Fig. 2A. That is, the Examiner has not established, and Froeschle does not expressly disclose, that the purported benefits derived in the Froeschle system would be translatable into a dual loudspeaker system having a construction based on the disclosure of Olson (which is not to be construed as an admission that there is a suggestion to combine there teachings, as was argued above).

In that claim 9 is clearly patentable over Olson in view of Froeschle, then claim 10 is clearly patentable as well since it pertains to the internal vent between the first and second chambers, while the express teachings of Olson provide "two acoustically closed chambers".

Independent claim 11 is drawn to a method for enhancing acoustical performance of a dual chamber acoustical enclosure, and includes extending a range of low frequency response of the

S.N. 09/973,338
Art Unit: 2837

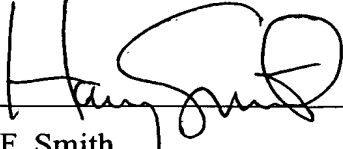
dual chamber acoustical enclosure to approximately thirty Hertz by placing a first speaker within a partitioning wall that separates a first chamber and a second chamber of the dual chamber acoustical enclosure, where a front portion of the first speaker has access to the first chamber and a back portion of the first speaker has access to the second chamber, and placing a second speaker within a wall of the first chamber where a front portion of the second speaker has access to air outside the enclosure and a back portion of the second speaker has access to the first chamber. The method claim further states that at least one wall of the walls that enclose the acoustic chamber comprises "portions that form an external vent to the second chamber".

As was argued above, there is clearly no suggestion to one skilled in the art to modify the Olson teachings with the teachings of Froeschle, in the manner done by the Examiner, in an attempt to arrive at the method claimed in claim 11. Also, it is again made of record that the Examiner has not established, and Froeschle does not expressly disclose, that the purported benefits derived in the single loudspeaker system of Froeschle would be translatable into a dual loudspeaker system having a construction based on the disclosure of Olson and, thus, it is not admitted that the proposed combination of Olson and Froeschle would result in "extending a range of low frequency response of the dual chamber acoustical enclosure to approximately thirty Hertz", as is recited in claim 11. In that claim 11 is clearly patentable over Olson in view of Froeschle, then claims 12-20 are clearly patentable as well. Note further in this regard that at least dependent claims 13, 15, 16, 18 and 20 pertain to the internal vent between the first and second chambers, while in contradistinction Olson teaches "two acoustically closed chambers".

The Examiner is respectfully requested to reconsider and remove the expressed rejection under 35 U.S.C. 103(a) based on Olson in view of Froeschle, and to allow claims 1-20.

S.N. 09/973,338
Art Unit: 2837

Respectfully submitted:



Harry F. Smith

3/12/2004
Date

Reg. No.: 32,493

Customer No.: 29683

HARRINGTON & SMITH, LLP
4 Research Drive
Shelton, CT 06484-6212

Telephone: (203)925-9400
Facsimile: (203)944-0245
email: hsmith@hspatent.com

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. BOX 1450, Alexandria, VA 22313-1450.

3/12/2004
Date

Kelani F. Mian
Name of Person Making Deposit